Regional Recycled Water Program Update

Engineering and Operations Committee
Item 6b
March 11, 2019

Outline

- Program Background
- Demonstration Plant
- Conceptual Planning Studies Report
  - Phasing Evaluation
  - Updated Program Costs
  - Recommended Program Implementation
- Next Steps

Program Concept

- Collaboration between Metropolitan and the Sanitation Districts of Los Angeles County
- Development of a new regional water source
- Up to 150 mgd (168,000 AFY)
- Deliveries to Member Agencies
- Recharge groundwater basins
- Increase regional storage reserves and reliability

Metropolitan & LACSD

- Decade of discussions on water recycling
  - 2010-12 Pilot studies on treatability of effluent
  - 2015 Discussions on a potential partnership
- November 2015 – Board authorized
  - Agreement with LA County Sanitation District No. 2 for development of potential regional recycled water program
  - Recycled water demonstration project
  - Feasibility and financing studies

Metropolitan & LACSD

- November 2016 – Feasibility Study Report
  - RRWP at 150 mgd is technically feasible
  - Identified challenges and uncertainties
  - Recommended additional conceptual planning studies
  - Total Capital Costs: $2.7 Billion (2016 dollars)
  - Unit Cost of Yield: $1,610 per acre-foot (2016 dollars)
  - Report reviewed by panel of independent subject-matter experts

AWT Location at JWPCP

Demonstration Plant

Demonstration Plant Construction

- Capital Program Budget: $17 million
- Construction Contract: $13.85 million
- Construction status: 98% complete
- Commence Operation and Testing: May 2019

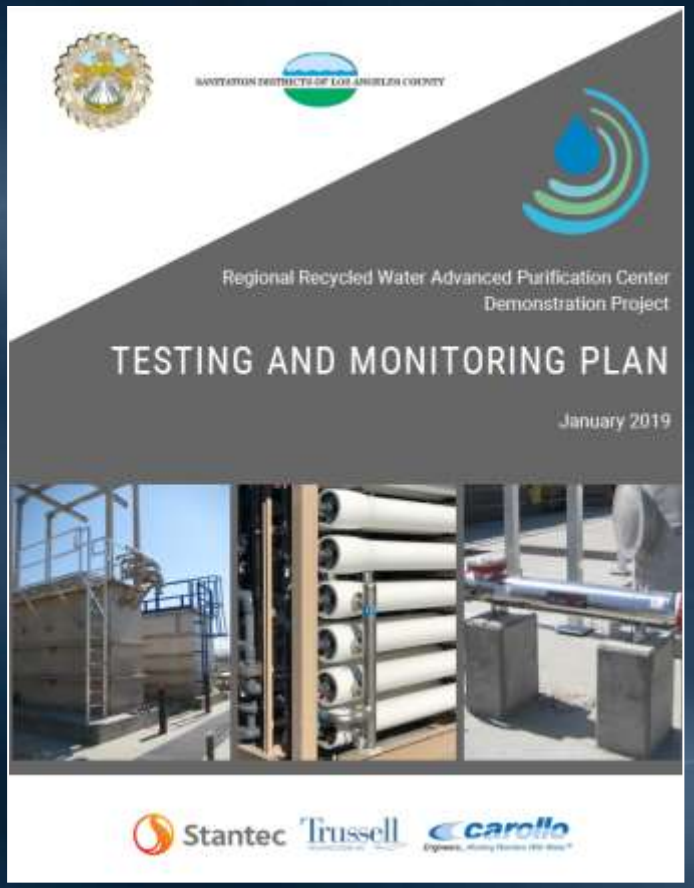
Facility Overview

Reverse Osmosis Skid Commissioning

Chemical Feed and Control System Commissioning

Demonstration Plant Testing and Monitoring Plan

- Independent Science Advisory Panel established to review work plan
- Regulatory approval of test plan obtained
- Initial 15 month test plan



Conceptual Planning Studies Report

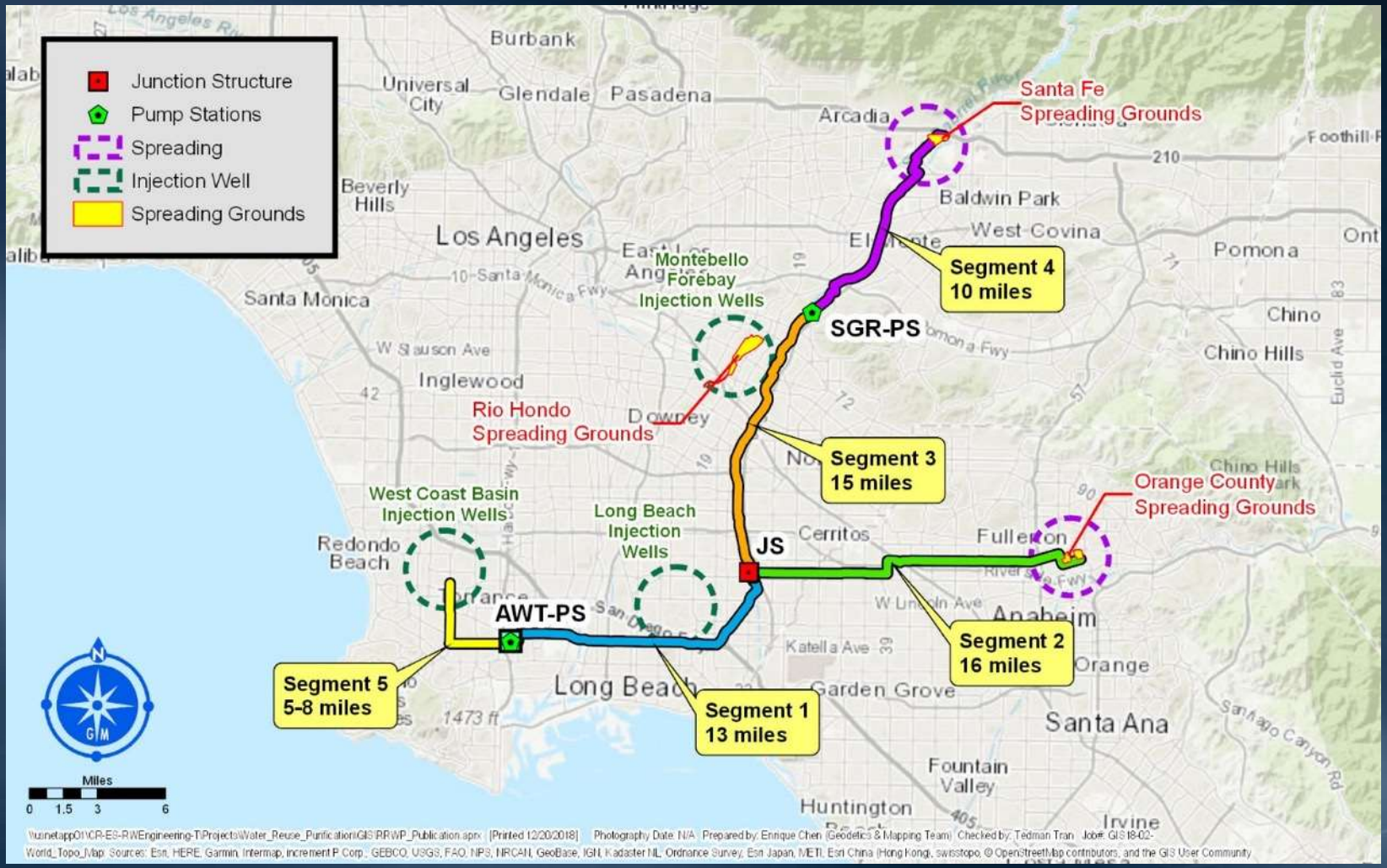
Conceptual Planning: Major Conclusions

- Phased implementation is recommended
  - 100 MGD first phase
- Include backbone conveyance system within first phase of program
  - Capacity up to 150 MGD
- Include potential for future Direct Potable Reuse (DPR) applications within overall program
- New cost estimate developed (2018 dollars)
- Phased approach is cost effective

Benefits Of Phasing

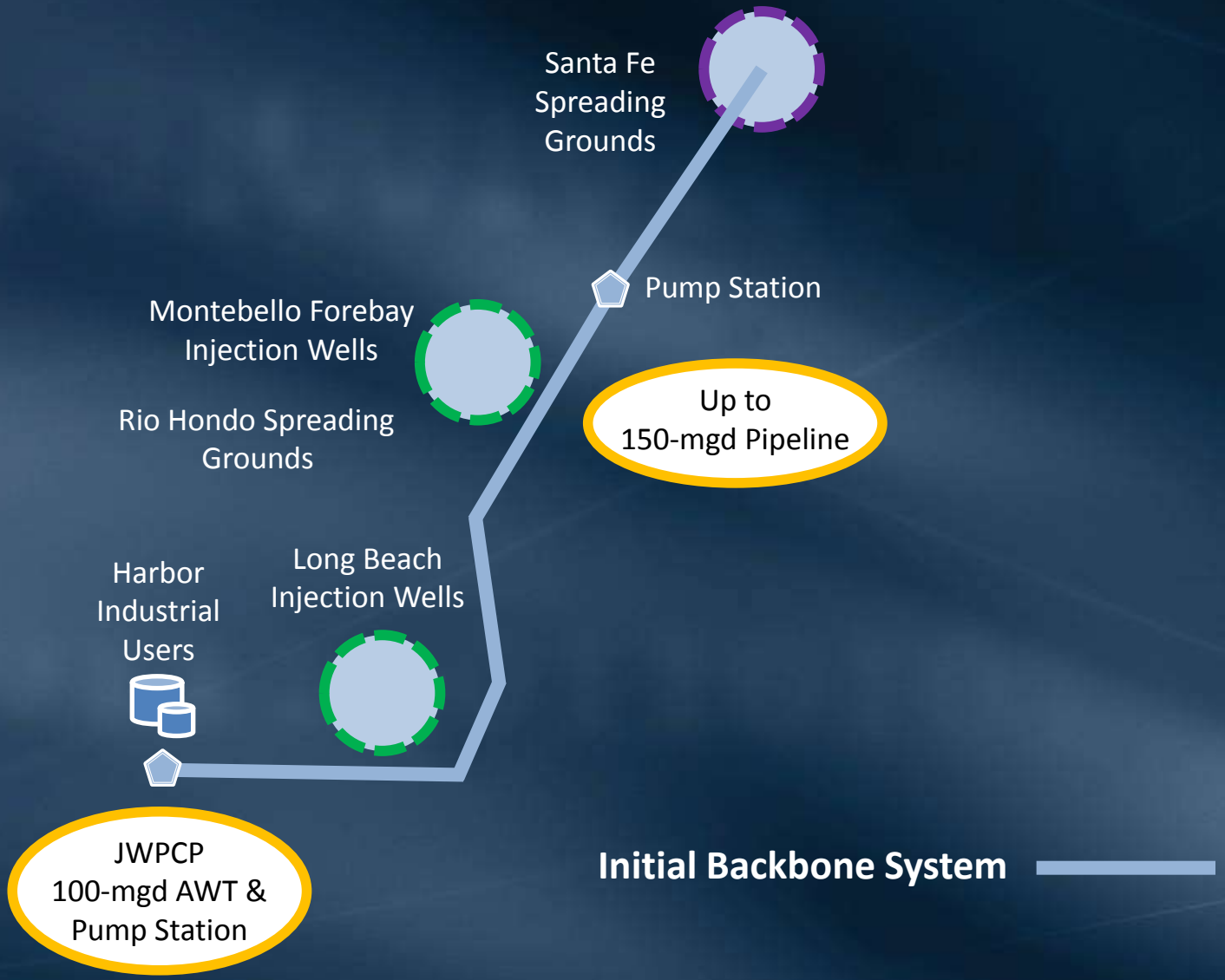
- Annual yield of 100 mgd closely matches near-term demands
- Production of 100 mgd increases certainty of wastewater flow availability
- Regulatory complexity reduced
- Future DPR opportunities are preserved
- Unit production costs at 100 MGD are competitive with ultimate capacity at 150 MGD
- Impact on overall MWD costs reduced from full-scale implementation

Conceptual Conveyance Alignment

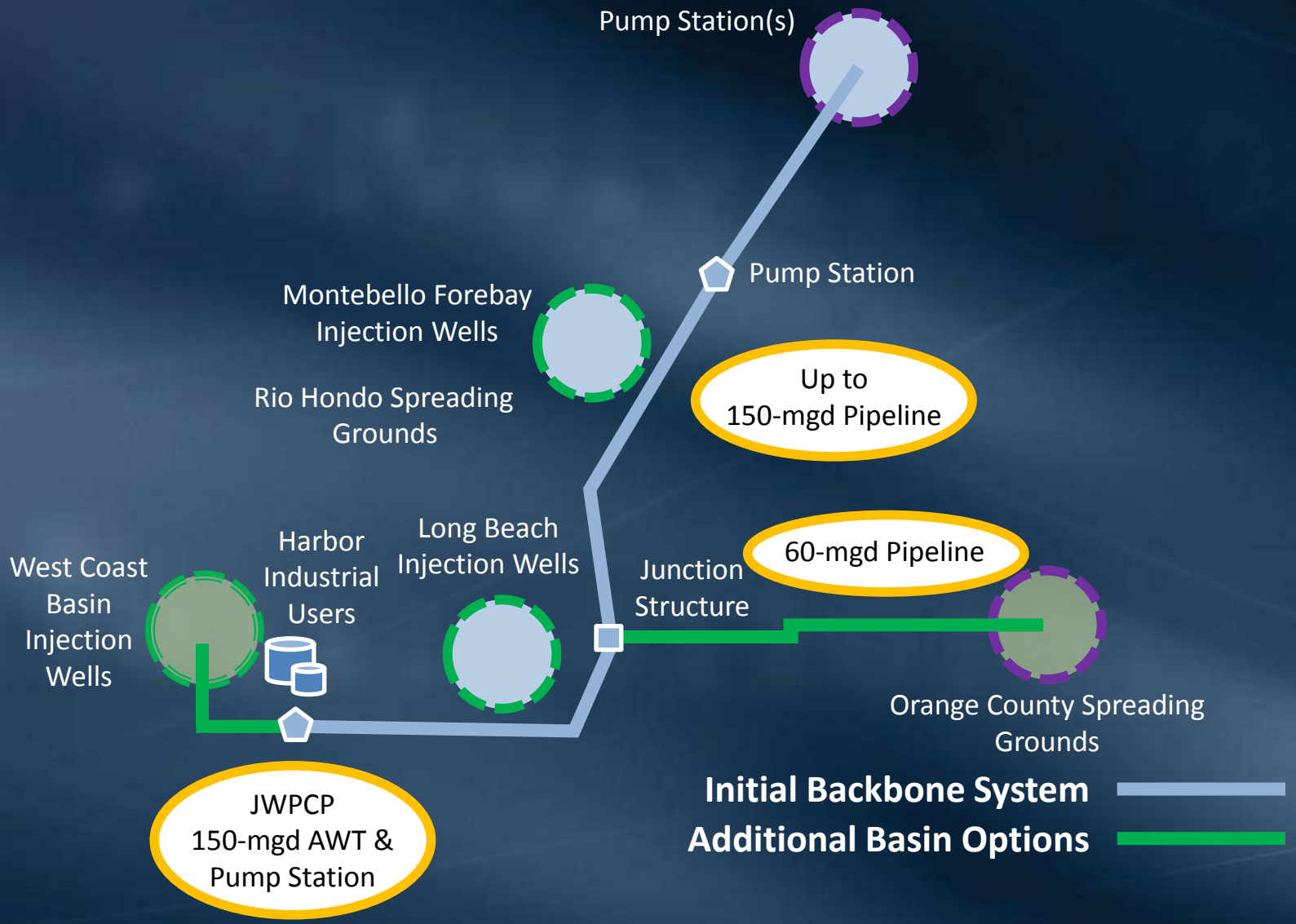


Proposed Program

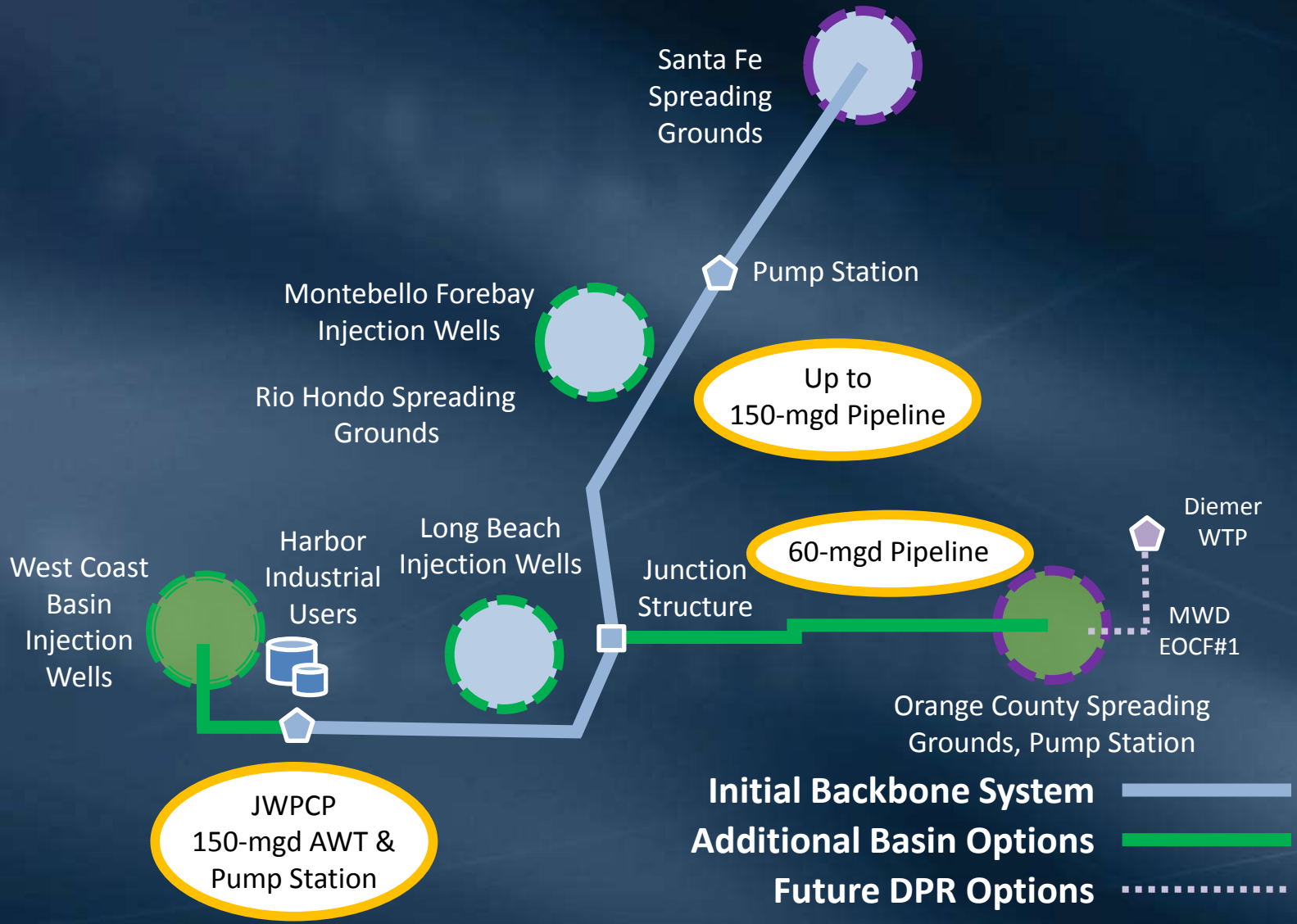
Phase 1: Backbone System



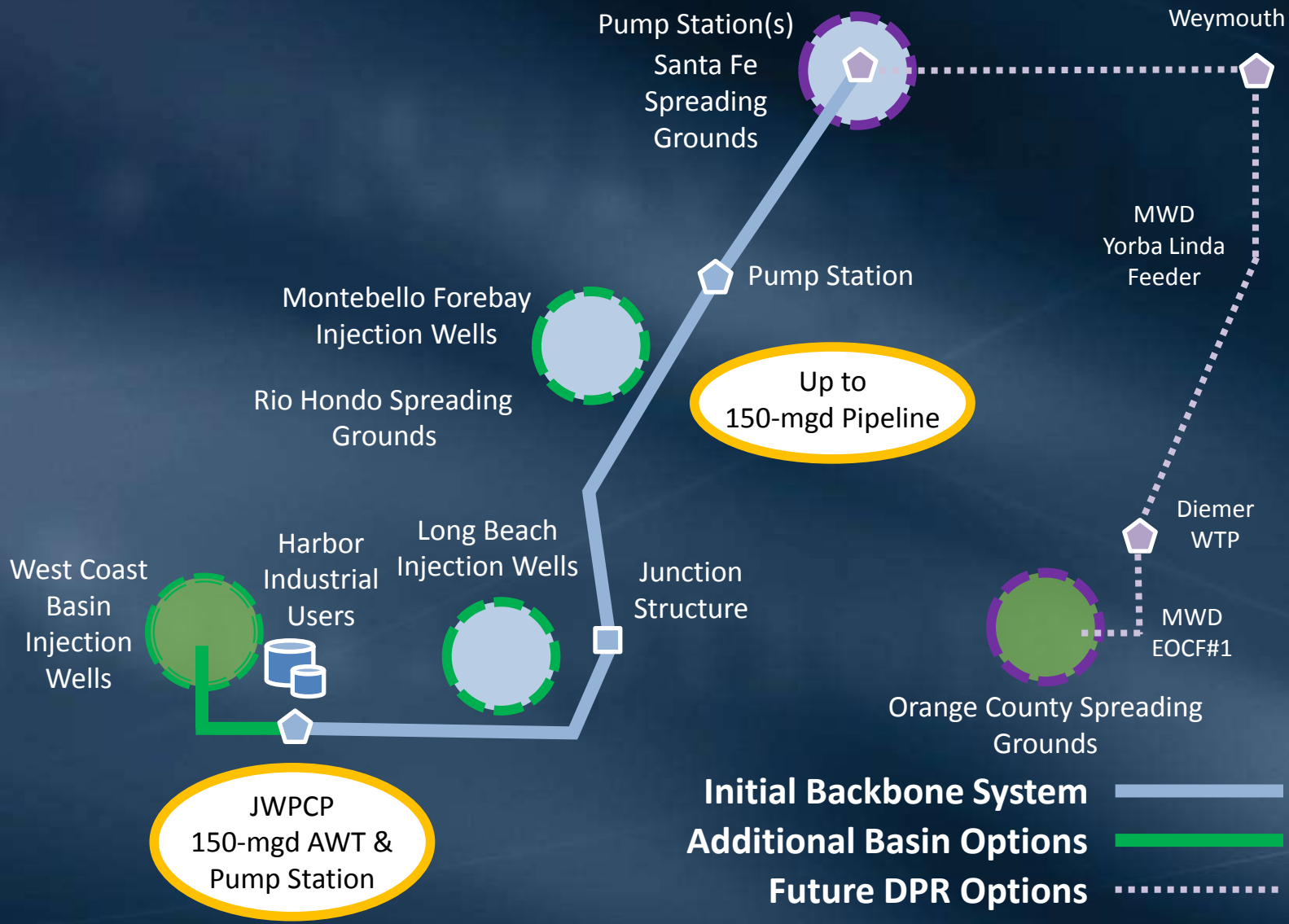
Phase 2: Additional Recharge



Phase 2: DPR Option at Diemer WTP



Phase 2: DPR Option at Weymouth WTP



Additional Comments

- Programmatic approach to Environmental Documents recommended
  - Will cover near- and long-term program objectives
  - May include project-specific details as appropriate to allow early deliveries
- Further refinement of DPR options
  - Will continue during environmental planning
  - Will evolve as regulations are developed
- Cost estimates have been updated from 2016 to 2018 dollars

Updated Program Costs

Recommended Program

	Phase 1 Backbone (2018 Dollars)	Full Program[1,2] (2018 Dollars)
Production Capacity (mgd)	100	150
Capital Program Cost[3]	$2.6 billion	$3.4 billion
Program Unit Cost of Yield ($/AF)	$1,813	$1,826

[1]Adds Orange County and West Basin deliveries to Initial Backbone system
[2]Does not include costs for DPR to Weymouth or Diemer WTPs
[3]Costs include 25% for engineering services and 35% overall program contingency

Next Steps

Preliminary Board Workshop Goals

- Provide sufficient information for approval of a 2019 Board action, potentially consisting of:
  - Commencing CEQA process
  - Beginning preliminary engineering
  - Refining rights of way
- Define approach to cost recovery
- Develop consensus on integrating this program into next biennial budget cycle
- Discuss potential alternatives that enable early delivery of purified water

Examples of Workshop Questions

- What additional information is needed before proceeding to CEQA and predesign activities?
- How should the program costs be recovered?
- What level of commitment from recipients is needed before proceeding?
- How important is retaining the ability to incorporate future DPR opportunities?
- Is the level of regional collaboration with Metropolitan sufficient to enable program implementation?
- Is early-delivery of water a program goal?

Next Steps

- Continue Demonstration Plant testing for regulatory approval and AWT optimization (May 2019)
- Issue White Papers (Spring 2019)
- Conduct Board Workshops (Spring-Summer 2019)
- Board Action to proceed with environmental process and engineering support (Fall 2019)

Metropolitan's Recycled Water Website

www.mwdh2o.com/RRWP


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928